



KEY POINT SUMMARY

OBJECTIVES

St. Joseph's Community Hospital of West Bend convened a cross-departmental team of system engineers, healthcare and patient safety experts. The group formed an 11-member facility design advisory council charged with designing their new facility involving innovative design elements that included truly standardized patient rooms, new technology to minimize falls, and patient care alcoves for every patient room.

Enhancing the Traditional Hospital Design Process: A Focus on Patient Safety

Reiling, J.G., Knutzen, B.L., Wallen, T.K., McCullough, S., Miller, R., Chernos, S. *March 2004 / The Joint Commission Journal on Quality and Safety Volume 30, Issue 3, Pages 115-24*

Key Concepts/Context

The current study is an overview of innovative system engineering and patient safety factors, named as the Synergy model that a hospital system utilized to design their new facility.

Methods

Although it is widely acknowledged that the physical environment has a significant impact on health and safety, hospitals have not been designed with the explicit goal of enhancing patient safety through facility design innovations. Due to the lack of available data on how the design of healthcare facilities affects the quality and safety of patient care, St. Joseph's assembled a team of experts to design their new facility that would incorporate all the design elements from systems engineering to optimize healthcare staff performance, increase patient satisfaction, and improve patient safety.

In April 2002 leaders in systems engineering, healthcare administration, health services research, human behavior research, hospital quality improvement and accreditation, hospital architecture, medical education, pharmacy, nursing, and medicine participated in a conference, "Charting the Course for Patient Safety—A Learning Lab." The primary message was that safe hospitals could be designed by doing the following:

- Using a process that supports the anticipation, identification, and avoidance of failure
- Designing against the latent conditions and active failures compromising physical and organizational defenses
- Creating an organizational culture of safety



Participants were then directed to small work groups and led through a structured process designed to develop recommendations that St. Joseph's could use in designing a safe hospital. They were asked to consider designing the new facility around 10 specific precarious hospital events namely,

1) Operative/post-op complications/infections, 2) Inpatient suicides, 3) Correct tube—correct connector—correct hole, 4) Wrong-site surgery, 5) Oxygen cylinder hazard, 6) Events relating to medication errors, 7) Deaths of patients in restraints, 8) Transfusion-related events, 9) Patient falls, 10) MRI hazards.

Findings

The challenge at St. Joseph's was to change the traditional hospital design process to incorporate the safety-driven design recommendations from the learning lab. The design process was approached from a patient's perspective, from admission through discharge. Some of the changes to the traditional design process were:

1. Visibility of patients to staff
2. Patient room standardization
3. Automation where possible
4. Scalability and adaptability
5. Immediate access to information at the point of service
6. Noise reduction strategies
7. Patient involvement with care
8. Minimizing fatigue
9. Using FMEA at every step of the design process
10. Design for vulnerable patients
11. Human factors review
12. Design around precarious events

Limitations

St. Joseph's faced major challenges while designing their new facility. They were:

- Gaining recognition/buy in to design the new, safer facility using new design elements
- Continued focus on safety-driven design principles
- Changing the traditional design focus and adapting new design principles based on systems engineering, human factors, and patient safety culture principles.

Design Implications

St. Joseph's Community Hospital has developed a set of safety-driven design principles that can be used by other healthcare providers, whether they are building a new facility or remodeling an existing facility. These principles focus on creating



The Center for Health Design: Moving Healthcare Forward

The Center for Health Design advances best practices and empowers healthcare leaders with quality research providing the value of design in improving patient and performance outcomes in healthcare facility planning, design, and construction, optimizing the healthcare experience and contributing to superior patient, staff, and performance outcomes.

Learn more at
www.healthdesign.org

an environment that minimizes latent conditions and active failures in the healthcare facility. The goal at St. Joseph's is to enhance the mission of providing personalized, trusted care for patients and their families, with improved quality and safety.